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# Preface

Microbiology Abstracts Section B commenced publication in October 1966 and is published monthly. Each issue at present contains between 800 and 1000 abstracts. In compiling each month's edition of Microbiology Abstracts IRL's editorial staff monitor a multi-disciplinary list of 3400 primary journals. This ensures that information on related disciplines, as well as the primary literature in the field of microbiology is covered.

Abstracts are presented in numerical order under 53 subject headings and sub-headings, and abstracts relevant to more than one section are cross-referenced. Each issue contains a full author index & species index. At the end of each volume an index is published in which every abstract is indexed under appropriate subject entry points. In addition, computer-generated Annual Author Indexes are produced.

Titles are given in English for all papers; titles of papers in the European languages, excluding those using the Cyrillic alphabets, are also given in the original language; for other languages only the English translation is given. The authors' names follow the abstract title together with the present address of the first author. Full bibliographic data concerning the source journal are given and journal titles are abbreviated in accordance with the procedures laid down by the American National Standards Institute Committee Z39.

The editorial policy of IRL is to present informative abstracts in 150 to 300 words, except for extremely long review papers; in such cases an indicative abstract is provided.

When an author's summary in the primary journal meets IRL editorial criteria
this is cited in preference to writing a new abstract; this accords with the recent recommendations of the American Nation
Standards Institute Sub-Committee no.6
Committee Z39. The language of the origi
paper together with those of the summarie
provided are indicated at the end of the abstract.

Frequently used scientific terms are abbreviated in the abstract text, and a full list of permitted abbreviations is shown on the inside back cover. Terms in common usage are also abbreviated, following normal scientific practice.

The table of contents shows the full scope of Microbiology Abstracts Section B. Papers on every aspect of pure bacteriolog
are reported and separate sections are provided for those on Mycoplasmatales an
Rickettsiales. The manner in which the abstracts are arranged within a sub-sectio
is standard from issue to issue and is either taxonomical according to the seventh edition of Bergey's Manual of Determinati
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# Microbiology Abstracts

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Editor in chief E.S.Krudy
Editor Nicola D. Eglinton
Compiled by Nicola D. Eglinton and
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Published monthly
Second class postage paid at
Jamaica, N.Y. 11431

Compiled and printed in England

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Achromobacter butyri 2948 3686
Achromobacter cycloclastes 9586
Achromobacter D 8559 8560
Achromobacter fischeri 4486 5451 9641
Achromobacter iophagus 11367
Achromobacter liquefaciens 5598
Achromobacter nematophilus 19 9387 10363
Achromobacter polymorph 3628
Achromobacter sp. 2044 2237 2948 2976
Achromobacter spp. 886
Achromobacter superficialis 3628 4518
Achromobacter xerosis 10738
Achromobacter xylosoxidans sp.n. 2553
Achromobacteraceae 4465 5492 10420
Acidaminococcus 7293
Acinetobacter 4271 4636 5159 5579 5810 6259 7526 8201 8236 9540 9757 9916 9984 10776
Acinetobacter anitratum 895 2168 5828
Acinetobacter calcoaceticus 359 1913 2715 7588 10937
Acinetobacter haemolyticus 895
Acinetobacter lwoffi 895 1321 4543
Acinetobacter spp. 886 1115 1742 2045
Acinetobacter-Moraxella 5158
Acrocylindrium oryzae 9683
Actinobacillus 1221 11102
Actinobacillus actinomycetemcomitans 7103 10954
Actinobacillus equuli 1495 4288 4938 8037 11113
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Actinomyces albus var.fungatus 8579
Actinomyces antibioticus 429 1882 4563 6648 10896
Actinomyces aureofaciens 429
Actinomyces aureoverticillatus 9714
Actinomyces azureus 6650
Actinomyces bellus 6650
Actinomyces bicolor 6650
Actinomyces bovis 1644 2318 3930 7382 11051
Actinomyces caelestis 6650
Actinomyces calvus 6650
Actinomyces candidus 429
Actinomyces canus 6650
Actinomyces chibaensis 6650
Actinomyces chromofuscus 6242
Actinomyces chrysomallus 7614
Actinomyces cinereoruber 9714
Actinomyces cinereoviridis sp.n. 9671
Actinomyces cinnamomeus 429
Actinomyces coeruleorubidus 6650
Actinomyces coerulescens 6650
Actinomyces diastaticus 9714
Actinomyces finlayi 6321
Actinomyces flaveolus 9714
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Actinomyces fumosus 429
Actinomyces galbus 6650
Actinomyces gedanensis 9714
Actinomyces gelaticus 9714
Actinomyces glaucescens 9714
Actinomyces glaucus 91
Actinomyces globisporus 429 9353
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Actinomyces griseovaribilis 429
Actinomyces griseus 187 429
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Actinomyces hygroscopicus 1308 9354
Actinomyces israelii 3038 3054 3931 5898 7382 7682 8130 9132 10100 10966 10980 10981 11207
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Actinomyces lavendulae 9714
Actinomyces lavendulae var.ucrainicus 429
Actinomyces levoris 3687 4402 7757
Actinomyces naeslundii 615 7299 7382 7682 9132 11207
Actinomyces necrophorus 6995

Actinomyces netropsis 4656
Actinomyces niveus 1199
Actinomyces nodosus 6651
Actinomyces noursei 6569
Actinomyces odontolyticus 615 7382
Actinomyces odorifer 4459
Actinomyces olivaceoviridis 429
Actinomyces olivobrunneus 6537 7614
Actinomyces olivovariabilis 2770
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Actinomyces polymycini 9354
Actinomyces pseudogriseolus 6650
Actinomyces pseudovenezuelae 7615
Actinomyces rimosus 3640 4567
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Actinomyces viscosus 4301 5139 7299 7382 8658
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Aegyptianella pullorum 5000
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Aerobacter cloacae 1984 2401 3583 4610 5563 5818 6745 8110 9321 9985 10564 10685
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Aerobacter spp. 1626
Aerobacter-Klebsiella 2920 5897
Aerococcus 4349
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Aeromonas liquefaciens 292 1209 1955 2719 2727 2877 3375 4629 5781 6581 8532 8620 11106 11367
Aeromonas punctata 6123 6273 7968 10113
Aeromonas salmonicida 501 1176 1275 1955 2719 2727 4932 5781 7224 8051 8357 11106 11107
Aeromonas shigelloides 21 1176 7321 8051
Aeromonas sp. 2037
Aeromonas spp. 903
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Agrobacterium rhizogenes 1745 2765 4029 9333
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Agrobacterium tumefaciens 734 818 961 1190 1525 1723 1745 1837 2834 3152 3515 4029 4589 5200 5324 5334 5711 5998 6348 7025 7724 7825 7827 8427 9215 9333 9800 11280 11281
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Alcalescens dispar 2075 5721 6828
Alcaligenes 192 654 3175 4085 4446 6212 6252 6259 6857 8129 8692 9308 9311 9333 9613 9985 10776
Alcaligenes aestus 7349
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Alcaligenes eutrophus 359 3451 10601
Alcaligenes faecalis 895 1321 1452 2215 4501 4596 4704 4824 4935 5886 6212 6413 6826 8029 8186 8377 8620 9321 9552 10009 10163 10288 10650
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Arizona spp. 410 906 1747 1748 2049 2075
Arthrobacter 18 1066 3411 3660 4413 4446 4585 6256 6357 6452 6523 6526 7394 8236 8451 8616 8617 8654 9308 9330 9753 10404 10406 10421 10748 11363
Arthrobacter atrocyaneus 4295 7690 8258
Arthrobacter aurescens 384 8258
Arthrobacter citreus 5352 8258
Arthrobacter crystallopoietes 7641 9521
Arthrobacter flavescens 4295 9683
Arthrobacter globiformis 4295 8258
Arthrobacter oxydans 8258 9576 9577
Arthrobacter paraffineus 6390 9518
Arthrobacter pascens 8258 8553
Arthrobacter simplex 384 1887 2948 5304 5510 5551 8258
Arthrobacter sp. 163 164 1075 1939 2771
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Azotobacter 192 885 4241 5439 5773 7586 8222 8541 9296 9693 11360
Azotobacter agile 384
Azotobacter beijerinckii 1020 1057 8554
Azotobacter chroococcum 309 384 1057 1931 2092 2697 2814 2891 5521 5718 6557 7606 7717 7812 8224 8227 8597 8598 8599 8841 9661 9691 9692 10311 10651 10652 10741 10742 10829
Azotobacter insignis 1057
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Azotobacter paspali 8204 8224
Azotobacter sp. 879 2037 2896 3379
Azotobacter vinelandii 328 359 1057 1080 1084 1248 1300 1868 1964 1975 2641 2698 2699 2700 2701 2702 2732 2761 3702 4399 4487 4488 4553 5257 5449 5452 5499 5521 6313 6523 7447 7535 7546 7581 7637 7641 8224 9385 9386 9457 9485 9661 10543 10582 10633
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Azotomonas fermentans sp.n. 263 8241
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Bacillus aerothermophilus 423 491
Bacillus alvei 4297 6504 9314
Bacillus amyloliquefaciens 2718 2722 3636 7391 8321 8653 9604 9605 10584 10672 10862
Bacillus anitratum 9985
Bacillus anthracis 544 712 841 945 1499 2370 2407 2901 2910 2924 2941 3240 4978 5962 5983 6941 8075 8393 8703 9106 9145 9163 10017 10098 10285 11188 11245 11275
Bacillus anthracoides 9278
Bacillus aurantius 6534
Bacillus badius 3378 6209 9314
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Bacillus brevis 322 397 2755 3220 3663 4297 4403 5486 5741 6209 6366 6369 6534 7621 7651 8761 9221 9314 9618
Bacillus caldolyticus 3805 4424 4442
Bacillus caldotenax 3805 4424 4442
Bacillus caldovelox 4442
Bacillus calidolactis 7351 9314
Bacillus Calmette-Guérin 2460 2516
Bacillus cereus 87 89 244 523 865 943 945 1078 1094 1101 1231 1411 1968 1986 2029 2030 2196 2670 2672 2706 2707 2708 2709 2710 2711 2742 2941 2942 2948 3378 3456 3458 3486 3520 3527 3528 3685 3916 4186 4339 4390 4451 4557 4586 4615 4762 4775 5223 5327 5458 5553 5597 5598 5960 6021 6186 6201 6238 6445 6466 6525 6534 6629 6801 6810 7542 7543 7690 7779 7829 8295 8460 8544 8619 8620 8995 9099 9314 9321 9470 9504 9601 10018 10288 10363 10613 11245 11246 11358
Bacillus cereus var.mycoides 852 4722 4906 5777 9314 11358

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Bacillus circulans thermophilus 397
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Bacillus coagulans 271 397 2679 3527 6525 7778 10123 10453 10529
Bacillus cohaerens 5777 6534
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Bacillus faecalis 8910
Bacillus faecalis alcaligenes 5833
Bacillus filicolonicus 9314
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Bacillus fribourgensis 8060 10363
Bacillus immomarinus 9314
Bacillus larvae 685 1023 1561 3145 5225 5769 6291 11353
Bacillus laterosporus 2799 4297 6209
Bacillus lentimorbus 10362 10363
Bacillus licheniformis 280 525 1907 2200 3621 4391 4392 4470 5262 5264 6209 6479 6541 7230 7637 7779 8421 8493 8494 8620 9314 9463 9674 10537 10862
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Bacillus macerans 4297 6238 9314 9661
Bacillus mallei 10483
Bacillus megaterium 89 207 213 216 471 484 490 495 745 945 1094 1142 1163 1194 1197 1346 2030 2730 2748 2764 2887 2941 2948 3241 3242 3378 3520 3525 3529 3595 3597 3693 3712 3733 4186 4361 4467 4586 4588 4589 4740 5265 5266 5332 5352 5539 5563 5760 5777 6238 6360 6365 6525 6564 6770 6781 6807 7441 7458 7475 7544 7607 7641 7652 7680 8400 8401 8408 8542 8619 8620 8637 8711 8763 9309 9321 9359 9463 9477 9485 9504 9554 9705 10430 10725 10788 10825 10892 11245 11358
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Bacillus melonis 6534
Bacillus mesentericus 973 3527 3645 4935 8542 9548 9621 10934
Bacillus mesentericus vulgatus 10140
Bacillus mucosus 6534
Bacillus mycoides 89 2037 3661 4589 4763 4766 5599
Bacillus mycoides roseus 6534
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Bacillus penicillus 5387
Bacillus piliformis 2337 8076
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Bacillus polymyxa 1084 2163 2541 2730 3378 4297 4488 5989 7441 8375 9035 9314 9661 10123
Bacillus polymyxa var.colistinus 10719
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Bacillus popilliae melolontha 8060
Bacillus prodigiosus 3355
Bacillus proteus 1450 2983 4471 7835
Bacillus pseudoanthracis 10934
Bacillus psychrophilus 3804
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Bacillus pumilus 289 420 3378 6209 6346 6707 8620 9314 10862
Bacillus pycnoticus 9324
Bacillus pyocyaneus 526 637 1480 4764 6882
Bacillus serratus 6534
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Bacillus sotto 4129
Bacillus sp. 1081 1082 2536 2562
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Bacillus sphaericus 321 335 1044 1334 4297 6547 8416 8665
Bacillus spp. 886 2199 2213
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Bacillus stearothermophilus var.calidolactis 9741
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Bacillus thuringiensis var.galleriae 10935
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Bacillus thuringiensis var.tolworthi 2633
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Bacterium album 889
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Bacterium coli 10419
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Bacteroides distasonis 1577 8813
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Bifidobacterium infantis 1774 2604
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Bifidobacterium pseudolongum 2604
Bifidobacterium ruminale 2604 5220
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Bordetella parapertussis 33 3853 5042 5069 6111 9938 10776 11000 11161 11199
Bordetella pertussis 581 739 780 781 782 783 806 1170 1391 1586 1631 2053 3232 3277 3300 3302 3303 3338 3348 3852 3853 3892 3984 4111 4136 4137 4197 4650 4652 4788 4967 5042 5067 5068 5069 5078 5119 6075 6084 6111 6140 6141 6142 6197 6283 7202 7203 7208 7265 7275 7922 8025 8066 8092 8114 8115 8116 8119 8120 8135 9088 9197 9198 9202 9206 9218 9938 10098 10161 10224 10267 10268 10269 10270 10292 10350 10776 11000 11161 11198 11199 11270 11271
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Borrelia anserina 4931 5000 9356
Borrelia duttonii 3359 10796
Borrelia gallinarum 2346
Borrelia recurrentis 10982
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Brevibacterium ammoniagenes 100 2720 5420 8293 8606 8620 9642
Brevibacterium divaricatum 4295 8258
Brevibacterium fermentans 8258
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Escherichia coli B 83
Escherichia freundii 3472 3731 6408 10073
Escherichia intermedia 852 8189 9321
Escherichia spp. 1574 2075
Escherichieae 4550 8029
Eubacterium 860 5734 9218 9493
Eubacterium aerofaciens 1772 9346
Eubacterium biforme 9346
Eubacterium cellulosolvens 7348
Eubacterium disciformans 9346
Eubacterium filamentosum 2083
Eubacterium fissicatena 9346
Eubacterium lentum 1770 9733
Eubacterium limosum 3838 6548 9346
Eubacterium ruminantium 3838 6548 9346
Eubacterium saburreum 2406 11205
Eubacterium sp. 2054
Eubacterium spp. 2083

Fergusonia shigelloides 21
Ferrobacillus ferrooxidans 1111 5522 9638 9688 10433
Ferrobacillus sulfooxidans 9638 10433
Flavobacter 5584
Flavobacterium 880 3153 4003 4252 4267 4636 5137 5138 6259 6271 6274 6506 6874 7307 8201 8590 8890 9296 9308 9311 9330 9683 10343 10404 10415
Flavobacterium arborescens 2108 8258
Flavobacterium aurantiacum 3316 10311
Flavobacterium butyri 5354 7596 9472
Flavobacterium dehydrogenans 5392 8258
Flavobacterium dormitator 5223
Flavobacterium heparinum 4469 10596
Flavobacterium marinotypicum 8258
Flavobacterium meningosepticum 2976 6852 7866 10077
Flavobacterium peregrinum 357
Flavobacterium sp. 852 2018 2108 2556 2771
Flavobacterium spp. 886 1742 2045
Flavobacterium thermophilum 251 5333
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Flexibacter 61
Flexithrix dorotheae 6510
Francisella novicida 235 6104
Francisella tularensis 235 824 3401 3730 4134 4135 5419 6104 8015 8131 9854 11268
Fusiformis 4798
Fusiformis necrophorus 4144 6995 9011 9153
Fusiformis nigrescens 1118
Fusiformis nodosus 4144 4993 9011 9153
Fusobacterium 4221 5734 6183 7293 7511 8557 8813 8903 9218 9243 9284 9340 9389 10011 10014 10966
Fusobacterium fusiforme 39 1234 2054 4715 6524
Fusobacterium fusiforme nucleatum 2083
Fusobacterium girans 9283
Fusobacterium mortiferum ridiculosum 2083
Fusobacterium necrogenes 9493
Fusobacterium necrophorum 5045
Fusobacterium sp. 2002 2054 3054 4112
Fusobacterium spp. 582 860 1940
Fusobacterium varium 2083 5045

Gaffkya 43 3840 4349
Gaffkya homari 4109 9262
Gaffkya tetragena 3068 3220 4596 6613
Gallionella 872 6250 10432
Gallionella ferruginea 7578 10414
Gordona gen.n. 921
Gordona bronchialis 921

Haemobartonella felis 1500
Haemobartonella procyoni sp.n. 6226
Haemobartonella spp. 1815
Haemophilus 2556 5802 5877 6212 6871 7885 7967 8195 8907 9279 9285 10009 10046
Haemophilus aegyptius 5797
Haemophilus aphrophilus 6618 10389

Haemophilus canis 4006
Haemophilus ducreyi 5803
Haemophilus duplex 5797
Haemophilus gallinarum 6285
Haemophilus haemoglobinophilus 6868
Haemophilus influenzae 26 551 575 589 634 1393 1409 1455 1456 1606 1607 1626 2171 2250 2267 2295 2363 2427 2609 2923 2928 2929 2959 2985 2998 2999 3000 3001 3002 3003 3063 3064 3070 3175 3183 3305 3370 3439 3513 3561 3617 3707 3777 3778 3855 3904 3967 4092 4143 4226 4348 4352 4674 4797 4835 4851 4916 5044 5296 5297 5425 5710 5738 5827 5892 5894 5904 6107 6108 6618 6743 6767 6820 6826 6869 6870 6873 6883 6888 6935 6936 6937 6941 6950 6976 7153 7298 7501 7502 7503 7704 7746 7839 7875 7923 7924 8130 8304 8685 8751 8752 8796 8812 8898 8899 9122 9200 9202 9423 9750 9812 9938 9939 9948 9995 10007 10037 10042 10054 10055 10056 10058 10060 10492 10818 10952 10953 11001 11005 11055
Haemophilus influenzae type b 760 761 2251 4855 5043 5070 6106 8897 9137 10210 10242
Haemophilus parahaemolyticus 1759 6826 10100
Haemophilus parainfluenzae 1890 1891 3776 5425 6613 6618 6872 7379 7637 8130 10034
Haemophilus pertussis 2957
Haemophilus piscium 11106
Haemophilus somnifer sp.n. 5089
Haemophilus sp. 1395 2046 2237 2901 3004
Haemophilus spp. 1369 2296 2299
Haemophilus suis 5161
Haemophilus vaginalis 867 3015 3440 5765 9996 10057
Hafnia 2556 2959 3168 3369 7315 9330
Halobacterium 9629 10928
Halobacterium cutirubrum 533 3591 4509 4510 4520 5383 5497 7479 7531 8328 8334 8499 8594 9438 9515 9523 10527 10644 10702 10706 10740 10939
Halobacterium halobium 172 7374 8594 9515
Halobacterium marismortui 9515
Halobacterium salinarium 7538 9515
Halococcus morrhuae 6312
Herellea 37 2562 3168 3885 4085 4271 5816 6857 8692 10997
Herellea sp. 2237 2367
Herellea spp. 2075 2223
Herellea vaginicola 37 585 1902 5456 6618 6874 8798 10248 11091
Hydrogenomonas 370 2730 3451 5393 5507 8418
Hydrogenomonas eutropha 336 337 2781 2890 4430 4571 5357 7560 7624 8584 8605 9524 10664 10737
Hydrogenomonas facilis 3502 3611 7560 7625
Hyphomicrobium 1730 2811 2812 2813 3516 6259 6523 7396
Hyphomicrobium neptunium 7396
Hyphomicrobium sp. 1224
Hyphomicrobium vulgare 6582

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Klebsiella 28 266 574 628 663 904 2556 2562 2987 3009 3064 3067 3069 3369 3397 3398 3731 3864 3885 3897 3899 3904 3905 3949 3952 4038 4085 4224 4422 4716 4718 4719 4720 4765 4793 4843 4893 4923 4937 5162 5578 5579 5580 5585 5721 5738 5802 5811 5815 5816 5828 5877 5885 5886 6013 6014 6215 6216 6219 6278 6486 6538 6595 6618 6715 6740 6750 6773 6777 6817 6855 6871 6933 6935 6940 7045 7315 7552 7586 7832 7835 7885 7960 8016 8194 8195 8247 8261 8411 8796 8805 8816 8836 8850 8884 8903 8904 8905 8907 8951 9053 9163 9285 9330 9503 9527 9683 9798 9867 9882 9916 9932 9938 9982 9985 10001 10034 10037 10043 10044 10045 10046 10047 10048 10056 10066 10120 10235 10342 10343 10441 10766 10815 10871 10873 10874 10996 11124 11154 11210 11346
Klebsiella aerogenes 1064 1178 1179 1215 1321 2097 2148 2692 2768 2786 2948 3951 4242 4491 4623 4636 4730 4778 4990 5563 5683 6365 6444 6630 6744 6759 7446 7458 7497 7637 7814 7834 7877 8247 8418 8458 8490 8608 8673 8674 8685 8888 8889 8954 9402 9477 9567 9757 9984 10739 10757 11153
Klebsiella carolis 10352
Klebsiella edwardsii 8247
Klebsiella edwardsii var.akantae 9984
Klebsiella edwardsii var.edwardsii 9984
Klebsiella genitalium 2333
Klebsiella oxytoca 5518 6883 9984 10684
Klebsiella ozaenae 1881 8247 8889 9984
Klebsiella pneumoniae 393 457 1389 1446 1513 1595 1709 1735 1748 1934 2047 2168 2205 2901 2907 2937 2943 2944 2959 2976 2985 3070 3140 3242 3305 3346 3855 3884 4039 4090 4199 4410 4488 4694 4724 4891 4892 4948 5784 5882 5951 6217 6255 6275 6277 6695 6756 6771 6802 6811 6856 6857 6858 6883 6888 6937 6941 7092 7153 7193 7336 7615 7920 8206 8246 8247 8262 8472 8798 8803 8889 8890 8944 9099 9200 9256 9661 9691 9841 9873 9910 9984 10060 10153 10320 10340 10684 10904 11316

Klebsiella rhinoscleromatis 1735 6819 8537 9984
Klebsiella rubiacearum 8247 9661
Klebsiella sp. 631 1385 1982 2046 2237 2241 2293 2359 2367 2695 2879 2902 2914 2955 2988 2991 3005 3055 3056
Klebsiella spp. 363 654 655 1398 1403 1480 1626 1747 1971 2049 2075 2096 2169 2289 2290 2299
Klebsiella-Aerobacter 509 550 629 1409 7836 7837 8206 10950
Klebsiella-Enterobacter 709 1538 2173 2295 2296 4002 4037 4727 4831 11091
Klebsielleae 8029
Knallgas bacterium 951
Kurthia 9321
Kurthia catenaforma 6361 6362

Lachnospira multiparus 3838 5384 6548
Lactobacillaceae 10471
Lactobacillus 271 2562 3250 3911 3916 4226 5563 5744 6219 6365 6396 6895 7107 7289 7293 7297 7471 7692 7886 8184 8188 8193 8557 8614 9188 9286 9477 10012 10014 10015 10384 10560 11096
Lactobacillus acidophilus 89 357 645 840 1271 1928 2494 5530 5707 6208 7227 7641 8353 8437 9218 9568 10076 10380 11327 11351
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Lactobacillus bifidus 4230 10395
Lactobacillus bifidus var. pennsylvanicus 8469
Lactobacillus brevis 1289 1936 3710 5598 6208 7604 7649
Lactobacillus buchneri 10693
Lactobacillus bulgaricus 2025 2796 3644 4583 5530 9030 10751
Lactobacillus casei 268 848 1166 1193 1997 2027 2647 2797 2897 3637 3709 4294 4446 4538 4583 5427 5599 5777 6208 6780 6803 7160 7299 7562 7671 8140 8262 9415 9665 9912 9918 10557 10607 10693 10694 10695
Lactobacillus casei (Orla Jensen) comb.n. 47
Lactobacillus casei subsp. rhamnosus 1896
Lactobacillus casei var. rhamnosus 3609 7650
Lactobacillus cellobiosus 4461
Lactobacillus coprophilus subsp. confusus 5221
Lactobacillus delbrueckii 48 49 4461 8262
Lactobacillus fermenti 467 1022 1028 1166 1896 3711 4461 5597 6208 8140 8799 9147
Lactobacillus helveticus 1028 1919 6208 7648 10751
Lactobacillus jugurti 6208
Lactobacillus lactis 1896 4461 9218 11242
Lactobacillus leichmannii 2027 3648 3732 4461 5370 8510 9401 10768
Lactobacillus plantarum 211 1289 1936 3565 3566 3609 3710 4381 4461 5390 5399 6208 6524 6626 7604 7647 7649 8140 8522 9776 10216 10569
Lactobacillus salivarius 847 4678 6208
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Lactobacillus spp. 1033 1702 1706 1721 1940
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Lamprocystis roseopersicina 3
Leptospira 4809 5782 5984 6097 7004 7358 7982 7983 8025 8044 8701 9779 10157 10193 10374 11162 11180 11369
Leptospira arborea 2469 4152
Leptospira australis 713 3204 3224 7465 9148 9964
Leptospira autumnalis 65 713 862 1432 1504 2398 3188 3224 3225 4089 6070 7221 7465 8192 9964 10200
Leptospira ballum 713 3224 6070 7659 8192
Leptospira bataviae 713 862 1432 2398 6070 8930 9148 9964
Leptospira bataviae serotype brasiliensis 10460
Leptospira benjamin 2398
Leptospira biflexa 2330 4172 7465 10565
Leptospira canicola 676 713 1487 2398 3204 3224 3225 4089 4151 4631 6070 6225 6660 6813 7221 7465 8030 9091 9148 9964 10200
Leptospira corincena 862
Leptospira cynopteri 713
Leptospira grippotyphosa 713 862 1487 1504 1505 2398 2469 3188 3224 4152 6070 6225 7086 7221 7858 8038 8192 9148 9964 10256 10985
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Leptospira hebdomadis strain Kyoto 4089
Leptospira hyos 6225 8038
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Leptospira interrogans serotype ballum 6224
Leptospira interrogans serotype canicola 10775
Leptospira interrogans serotype pomona 1639 10373
Leptospira javanica 713 9148 9289 9964
Leptospira paidjan 2398
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Leptospira rachmati 2398

Leptospira saxkoebing 2398
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Leptospira sentot 2398
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Leptospira szwajizak 2398
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Leptospira vanderhoedeni 2398
Leptospira wolffii 862
Leptothrix 872 5196 6250
Leptothrix falciformis 6324
Leptothrix racemosa 2981 6324
Leptotrichia 6183 7511 8813
Leptotrichia buccalis 39 1940 4715
Leptotrichia dentium 6324
Leuconostoc 7315 7604 8231
Leuconostoc citrovorum 6 1180 5530 8262 9697 9859 10751
Leuconostoc cremoris 8262
Leuconostoc dextranicum 5530 6797
Leuconostoc mesenteroides 1166 1935 1936 1945 2650 2675 4349 5351 5378 6362 6365 6623 7463 7647 9562
Leuconostoc oenos 1936 3710
Leucothrix mucor 6223 9485
Levinea amalonatica 22 7335 8262
Levinea malonatica 22 7335 8262
Listeria 4116 4806 4930 4996 5587 5841 6185 6898 8025 9285 9938 10157 10967 11328
Listeria monocytogenes 589 603 673 764 765 945 1230 1410 1498 1513 1595 1615 1691 2438 2562 2662 2822 2928 2966 3187 3222 3242 3255 3263 4139 4146 4747 4788 4856 4857 4941 5014 5130 5169 5694 5959 6063 6098 6618 6787 6828 7110 7161 7162 7163 7226 7258 7892 7977 8007 8065 8099 8192 8258 8899 8914 8915 9064 9144 9153 9163 9222 9265 9266 9270 9288 9704 9949 9950 10077 10112 10126 10229 10259 10361 10797 11014 11015 11016 11115 11174 11187
Listeria murrayi sp.n. 52
Listeria pirie 4296
Listeria sp. 1369 3264
Loefflerella sp. 2045

Malleomyces mallei 10207
Metallogenium 10432
Metallogenium personatum 892
Methanobacillus kuzneceovii 10736
Methanobacillus omelianskii 3395 7589 7590
Methanobacterium 3695 9661 10405
Methanobacterium ruminantium 2945 3395
Methanobacterium thermoautotrophicus sp.n. 3396
Methanomonas methanica 8623
Methanomonas methanooxidans 9623
Methanosarcina 86
Methylobacter 6523
Methylococcus 427
Methylococcus capsulatus 1146 1240 4673 6359 6523 6685 7484 8623 8625
Methylomonas 427 5254
Methylomonas agile 6359
Methylomonas albus 6359
Methylomonas methanica 6359
Methylosinus sporium 6523
Methylosinus trichosporium 6233 6359 6523
Microbacterium 6259 8606
Microbacterium flavum 2948 4295 7350 8258
Microbacterium lacticum 3585 4295 4446 4584 7350 8258
Microbacterium thermosphactum 7350
Microbispora 193
Microbispora parva 2665
Micrococcaceae 41 5492 6419 10420
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Micrococcus aquivivus 4109 8090
Micrococcus ascoformans 3399
Micrococcus aureus 5761
Micrococcus candicans 202 10564
Micrococcus cerificans 2730 4426
Micrococcus conglomeratus 163 1878 2403
Micrococcus cryophilus 84
Micrococcus denitrificans 2730 2757 2917 4426 4484 6252 7569 7637 9485 10725
Micrococcus diversus 4426
Micrococcus flavus 11245
Micrococcus freudenreichii 1762
Micrococcus glutamicus 5661 6357 7784 8362
Micrococcus hyicus 9163
Micrococcus indolicus 10278 10360
Micrococcus lactis 5583 7562
Micrococcus luteus 115 163 202 276 534 1113 1878 1916 2403 4454 6607 7547 8487 8488 8491 8496 8497 8530 8541 9457 9485 10668
Micrococcus lysodeikticus 219 324 495 516 525 1203 1866 1920 1937 1949 2172 2200 2607 2948 3474 3494 3644 4204 4359 4420 4436 4589 4596 4597 4740 4837 5012 5262 5444 5599 6425 6449 6745 7377 7402 7460 7461 7469 7500 7529 7600 7680 8280 8367 8421 8433 8463 8791 8829 8845 9161 9162 9359 9409 9474 9476 9485 9800 9905 9906 10482

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Micrococcus muscae 8129
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Micrococcus radiodurans 114 495 3779 4675 5546 6335 8306 8786 8787 10858
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Micrococcus saprophyticus 5583
Micrococcus sedentarius 534
Micrococcus sodonensis 4393
Micrococcus sp. 1030 2771 3005
Micrococcus spp. 886 2213
Micrococcus ureae 2037
Microcyclus aquaticus 17
Microellobosporia flavea 5230
Micromonospora 193 7319 8202 10409 10692
Micromonospora chalcea 59 2826
Micromonospora coerulea 59
Micromonospora fulvopurpurea 2826
Micromonospora fusca 2826
Micromonospora purpureochromogenes comb.n. 60
Micromonospora vulgaris 5464
Micropolyspora 1737 5230
Micropolyspora faeni 4304 6654 7003 7696 9136 10218 10255
Micropolyspora mesophilica 10486
Micropolyspora virida 10486
Mima 37 4271 5816
Mima polymorpha 37 1902 2367 3399 3861 4596 5818 5897 6828 6874 7863 8798 9946 10248
Mima polymorpha var.oxidans 5855
Mima sp. 2237
Mima spp. 2223
Mimeae 6286 6857
Miyagawanella 1622
Miyagawanella ornithosis 5097
Miyagawanella psittaci 5097
Moraxella 2556 4271 4840 5207 5732 5802 6219 6874 8899 10044 10776
Moraxella bovis 34 2860 7079 8710
Moraxella glucidolytica 8240
Moraxella kingii 2860 8710
Moraxella lacunata 35 895 6828
Moraxella liquefaciens 5168
Moraxella lwoffi 6450 8240
Moraxella nonliquefaciens 2860 5168 8710
Moraxella osloensis 895
Moraxella phenylpyruvica 36
Moraxella sp. 2367
Moraxella spp. 1742 2045 2290
Morganella 9683 9985 10449
Mycobacterales 5492
Mycobacterium 427 727 810 921 1695 3664 3738 3867 3869 3870 3871 3919 3920 3923 3924 3927 3928 3972 3986 4055 4058 4059 4060 4243 4434 4649 4735 4808 4861 4862 4866 4867 4868 4870 4881 4907 4908 4909 4910 4911 4912 4913 4914 4915 4975 4978 4998 5029 5085 5147 5411 5514 5746 5848 5849 5854 5910 5911 5912 5913 5914 5915 5935 5947 6037 6067 6069 6115 6150 6152 6162 6163 6202 6637 6638 6639 6710 6833 6900 6909 6910 6959 6962 6965 7060 7064 7065 7127 7128 7129 7130 7131 7199 7215 7219 7235 7283 7355 7394 7467 7695 7697 7824 7854 7893 7894 7895 7896 7899 7942 7964 7980 7983 8021 8042 8082 8083 8138 8171 8261 8423 8623 8867 8868 8919 8924 8970 8973 9014 9085 9086 9088 9146 9268 9330 9711 9712 9956 10024 10106 10125 10179 10197 10254 10405 10976 10977 10978 10979 11029 11030 11031 11076 11077 11078 11079 11080 11106 11118 11206 11354
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Mycobacterium acapulcensis 3414 10457
Mycobacterium africanum 2383 6963
Mycobacterium album 399 4387 8575 10975
Mycobacterium aquae 920 3737 5853 7845 9349 9868 10023 10975 11179
Mycobacterium aquae ureolyticum 5227
Mycobacterium arthritidis 9163
Mycobacterium aurantiacum 10975
Mycobacterium aurum 1781 6293 8980 10457 11021
Mycobacterium avium 57 751 812 1035 1173 2042 2408 2464 3619 3737 4077 4479 5226 5227 6292 6524 7108 7217 7605 8039 9107 9132 9270 9533 9868 10023 10198 10199 10826 10975 11021 11104 11179 11207 11333
Mycobacterium balnei 5226 9084 10970
Mycobacterium battey 2276
Mycobacterium borstelense 7353 9852 11021 11179
Mycobacterium borstelense var.niacinogenes 8925
Mycobacterium bovis 728 1417 1468 1517 1562 1563 2464 3288 3737 4075 4076 4480 5130 5227 5937 6066 6293 6490 7084 7108 7110 7605 7963 8040 8041 8675 8693 9002 9090 9108 9133 9225 9270 9351 9868 9872 9938 10198 10199 10372 10826 10944 10975 11175 11289
Mycobacterium bovis BCG 751 4098 4149 4162 4479 5056 5084 6095 6203 6204 6958 7112 7132 7163 7213 7216 7217 7218 7474 8062 8080 8125 8156 9208 9209 9210 9211 9212 9267 10021 10498 10925 11276 11290 11334 11335
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Mycobacterium butyricum 2468 7200 7220 7605 9174 9533 10281 10283 10457

Mycobacterium capsulatum 11207
Mycobacterium ceroformans 1779
Mycobacterium chelonei 6248 6294 6908 10457
Mycobacterium chitae 2276 7353 10457 11207
Mycobacterium diastaticum 340
Mycobacterium diernhoferi 9852 10457
Mycobacterium duvalii 3414
Mycobacterium engbaeki 4300
Mycobacterium enteritis 3133
Mycobacterium farcinica 10498
Mycobacterium flavescens 920 3414 6293 9349 10457 11021 11179
Mycobacterium flavum 326 4387 9661
Mycobacterium flavum var.methanicum 400
Mycobacterium fortuitum 402 1329 2275 2276 2464 3357 3619 4299 4479 4872 5226 5520 5847 6293 6908 6963 7108 7353 7845 8079 8921 9163 9852 9938 10457 10826 10970 10975 11021 11116 11179
Mycobacterium friedmannii 8925
Mycobacterium gallinarum 7353 9132 11207
Mycobacterium gastri 919 2276 6248 7845 11021
Mycobacterium giae 10457
Mycobacterium gilvum 3414
Mycobacterium globiforme 4387
Mycobacterium gordonae 6248 9349 11021
Mycobacterium hominis 9163
Mycobacterium hyalinum 4387
Mycobacterium intracellulare 57 1562 2343 2408 2464 3223 4261 5226 6248 6292 7108 7605 8039 9107 9349 10023 10826 10975 11021 11074
Mycobacterium johnei 751 1501 1502 1696 6526 9001 9755
Mycobacterium kansasii 402 728 919 2276 2343 2464 3201 3737 5226 5227 5908 6248 6293 6907 7108 7112 7605 7845 8263 9084 9132 9133 9349 9868 10023 10454 10944 10975 11021 11074 11075 11116 11179 11207
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Mycobacterium lacticola 326 400 4387 7605 8622
Mycobacterium lacticola var.aliphaticum 9350
Mycobacterium lactis 4300 7655
Mycobacterium leprae 90 351 556 612 613 614 752 1235 1414 1415 1548 1618 1647 1693 2227 2307 2355 2598 3023 3255 3266 3736 3917 3983 4699 5016 5054 5055 5146 5801 5845 5846 5909 6205 6642 6784 6953 7166 7605 7820 8173 8485 8917 8944 8976 8979 9132 9153 9163 9172 9222 9269 9271 9908 9958 10022 10079 10085 10164 10253 10899 10916 10975 11068 11176 11206 11207 11336
Mycobacterium lepraemurium 2035 3444 4654 5028 6151 6316 7820 8078 9153 9163 9908 11206 11207
Mycobacterium luteum 326
Mycobacterium marinum 402 3670 3737 3824 5226 5851 7845 7900 8918 8968 9938 9952 10079 10970 10975 11021 11022 11023 11024 11116
Mycobacterium microti 8078 8263 9133
Mycobacterium minetti 10975
Mycobacterium mucosum 326 384 400 1036 1777 2007 4387
Mycobacterium murium 9133
Mycobacterium nonchromogenicum 11021
Mycobacterium novum 11021
Mycobacterium obuense 11021
Mycobacterium obuense sp.n. 1780
Mycobacterium paraffinicum 2658 5377 6317
Mycobacterium parafortuitum 1781 8980 10457
Mycobacterium paratuberculosis 5031 7605 7965 9109 9133 9153 9272 10826
Mycobacterium peregrinum 10457
Mycobacterium perrugosum 1777
Mycobacterium phlei 364 384 400 402 547 945 1077 2170 2643 2654 2752 2767 2947 3242 3619 3737 4242 4479 4536 4552 4596 5226 5272 5520 6082 6524 7108 7109 7467 7474 7480 7600 7605 8414 8467 8480 8550 9457 9563 9852 10457 10826 10944 11021 11179 11233
Mycobacterium planum 4387
Mycobacterium ranae 6248
Mycobacterium rhodesiae 11021
Mycobacterium rhodesiae sp.n. 1781
Mycobacterium rhodochrous 7353 7355 8258 9826 10000
Mycobacterium rubrum 384 399 1777 4387 8415
Mycobacterium rubrum var.propanicum 400
Mycobacterium runyonii 8925
Mycobacterium salivarum 400
Mycobacterium salmoniphilum 11116
Mycobacterium scrofulaceum 57 402 920 2464 3737 4261 4859 5226 6292 6293 7108 7605 8927 9349 9533 9868 10023 10975 11021 11025
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Mycobacterium sporogenes 378
Mycobacterium spp. 1043 1148 1236 1426 1468 1778 2379
Mycobacterium stercoides 10498

Mycobacterium stercoris 7605
Mycobacterium szulgai 10456
Mycobacterium terrae 5226 6248 6293 11021 11179
Mycobacterium thamnopheos 9852
Mycobacterium thermoresistibile 11021
Mycobacterium triviale 11021
Mycobacterium tuberculosis 424 425 426 528 546 560 562 589 607 608 610 648 675 728 793 808 809 843 1014 1060 1305 1329 1369 1371 1372 1373 1374 1375 1376 1377 1416 1417 1418 1419 1420 1421 1422 1423 1424 1425 1468 1469 1470 1471 1472 1473 1474 1485 1549 1594 1619 1620 1636 1637 1643 1648 1694 2010 2061 2062 2086 2201 2214 2228 2229 2231 2270 2271 2272 2273 2274 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2326 2327 2338 2368 2371 2372 2373 2374 2375 2376 2377 2378 2380 2381 2382 2383 2384 2385 2439 2441 2464 2465 2518 2598 2643 2683 2825 2968 3024 3025 3026 3027 3028 3031 3032 3033 3034 3035 3053 3074 3076 3077 3078 3079 3081 3082 3084 3088 3089 3112 3130 3134 3143 3190 3191 3192 3193 3194 3195 3197 3198 3199 3200 3242 3255 3267 3268 3289 3291 3292 3308 3310 3311 3413 3445 3501 3641 3737 3824 3835 3866 3868 3918 3921 3922 3925 3926 3971 4056 4057 4075 4076 4097 4117 4118 4148 4156 4161 4289 4453 4537 4569 4626 4714 4759 4760 4779 4798 4807 4863 4864 4865 4974 4976 5030 5057 5083 5094 5226 5227 5520 5745 5770 5774 5798 5799 5800 5802 5850 5852 5866 5916 5934 5936 5937 5977 6038 6050 6068 6112 6114 6116 6164 6293 6318 6445 6640 6641 6643 6644 6745 6783 6799 6812 6820 6830 6831 6832 6884 6893 6899 6901 6902 6903 6904 6905 6906 6929 6941 6954 6955 6956 6957 6960 6961 6963 6964 6980 7015 7058 7059 7061 7062 7063 7108 7109 7125 7126 7167 7168 7169 7170 7171 7172 7173 7174 7213 7214 7216 7217 7233 7234 7354 7388 7467 7474 7605 7801 7802 7803 7846 7847 7848 7849 7850 7851 7852 7853 7855 7856 7897 7898 7934 7935 7936 7937 7938 7939 7940 7941 7955 7985 8023 8041 8079 8081 8126 8172 8263 8392 8414 8635 8693 8694 8699 8822 8823 8824 8843 8864 8866 8869 8870 8920 8921 8922 8923 8925 8944 8971 8972 8974 8975 8978 8983 8996 8997 8998 9082 9083 9084 9087 9089 9090 9132 9133 9134 9163 9173 9205 9206 9207 9222 9223 9224 9351 9352 9623 9868 9871 9872 9873 9896 9911 9918 9938 9953 9954 9955 9957 9976 10019 10020 10022 10023 10025 10078 10080 10081 10082 10083 10084 10103 10104 10105 10131 10178 10455 10498 10701 10826 10933 10944 10971 10972 10973 10974 10975 11025 11026 11027 11069 11070 11071 11072 11073 11074 11075 11117 11125 11126 11133 11177 11178 11207 11220 11221 11248 11337
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Mycobacterium ulcerans 4977 5976 6036 8865 8977 9015 9110 10975
Mycobacterium vaccae 1781 6293 7353 9852 10457 11179
Mycobacterium vadosum 7596
Mycobacterium xenopei 2339 6096 9107 9349 10023 10975 11021 11075 11179
Mycococcus 4303 7380 8263 10405
Mycococcus capsulatus 9132
Mycococcus lactis 7655
Mycococcus luteus 10827
Mycococcus mucosum 2568
Mycococcus ruber 2568
Mycococcus ruber var.bicolor 2568
Mycoplana 8241 9330
Mycoplasma 66 67 68 74 704 705 934 1531 2353 3157 3423 3430 3431 3432 3433 3434 3435 4079 4188 4320 4321 4322 4323 4324 4328 4446 4797 4855 4904 4957 5032 5060 5163 5238 5239 5240 5241 5242 5243 5244 5558 5799 5866 5944 6004 6005 6298 6302 6303 6304 6306 6382 6662 6664 6786 6893 6915 7016 7366 7377 7379 7558 8002 8003 8004 8174 8275 8640 8701 9032 9324 9371 9372 10046 10462 10463 11037
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Mycoplasma canis 1800 3422 5232 6299 8268
Mycoplasma caviae 69
Mycoplasma conjunctivae 3423
Mycoplasma dispar 5164 5232 7988
Mycoplasma felis 5232 8269
Mycoplasma fermentans 729 863 1433 1787 1803

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Mycoplasma hominis 71 729 863 868 870 929 1433 1791 1792 1803 2578 2579 2582 3073 3245 3427 3935 4232 4310 4855 5232 5235 6661 6663 7301 7361 7365 7905 8019 8268 8269 8271 9359 9362 9363 9364 9369 9409 9938 10320 10466 10577
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Mycoplasma laidlawii orale 729
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Mycoplasma parainfluenzae 10182
Mycoplasma pharyngis 863 2579 8269
Mycoplasma pneumoniae 715 716 863 931 1433 1802 1803 2280 2418 2522 3064 3205 3427 3428 4064 4103 4105 4916 5232 5610 5864 5898 6006 6098 6165 6663 6912 6913 6914 7176 7177 7365 7904 8061 8103 8128 8176 8268 8269 8688 8876 8877 8907 8931 8984 9176 9177 9363 9369 9370 9938 9995 10027 10470 10471 10472 10473 11035 11036 11061
Mycoplasma primatum 73
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Mycoplasma synoviae 2577 2583 2584 5965 10375
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Myxococcus virescens 1954 7530
Myxococcus xanthus 7489 8627 10634

Naumaniella 872
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Neisseria canis 4425
Neisseria catarrhalis 916 2267 3305 3840 3855 4425 4558 4596 6937 7110 7153 7748 8638 9200
Neisseria caviae 4425 7748 8638
Neisseria cinerea 4425 4558
Neisseria cuniculi 4425
Neisseria denitrificans 4425
Neisseria flava 916 4425 4558 7748 8426 8638
Neisseria flavescens 4425 8638
Neisseria gonorrhoeae 522 553 590 591 641 642 868 1313 1326 1327 1368 1400 1401 1458 1459 1460 1461 1462 1479 1546 2046 2223 2224 2225 2226 2262 2263 2300 2301 2324 2386 2562 2928 2960 2961 3015 3068 3071 3072 3073 3091 3092 3105 3177 3180 3819 3858 3859 3860 3874 3906 3960 3961 3962 3963 3964 3965 3966 3973 4049 4050 4051 4061 4228 4293 4632 4744 4745 4749

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Neisseria lactamicus 4425 8638
Neisseria meningitidis 190 191 521 588 589 654 916 1229 1312 1317 1369 1388 1393 1463 1545 1547 1626 2302 2928 2959 2963 3020 3031 3088 3177 3178 3183 3406 3407 3408 3901 3902 3983 4226 4798 4844 4845 5074 5135 5215 5694 5795 5827 5837 5895 6615 6617 6775 6820 6822 6873 6883 6893 6941 7279 7403 7470 7613 7684 7748 7951 8058 8073 8195 8638 8858 8899 8908 8909 8944 8993 9077 9078 9344 9701 9895 9938 9939 9944 10046 10069 10157 10170 10210 10247 10754 10953 10961 11169 11239 11259
Neisseria meningitidis group A 6144 6145 6146 10960 11095
Neisseria meningitidis group B 6825 7122 10960 11095
Neisseria meningitidis group C 6143 6145 6146 6948 7122 10960
Neisseria mucosa 3012 4425 4558 4845 8638
Neisseria ovis 4425 8638
Neisseria perflava 2264 4425 4558 4596 7748 8638
Neisseria pharyngis 916 9278
Neisseria pharyngitidis 6618
Neisseria saprophytaria 9999
Neisseria sicca 4425 4558 7454 7748 8426
Neisseria sp. 2237 2901
Neisseria spp. 1409 1940 2045
Neisseria subflava 4425 4558 7748 8638
Neisseria winogradskyi 4271
Neisseriaceae 5492
Neorickettsia helminthoeca 10478
Nitrobacter 1733 3516 5563 7583 8605 8828 9296 9659 9660
Nitrobacter agilis 215 1739 5532 6440 10927
Nitrobacter sp. 879
Nitrobacter winogradskyi 10 1739 2779 2780 4549 9924
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Nitrococcus mobilis 10 9485
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Nitrococcus oceanus 9485
Nitrosococcus oceanus 10
Nitrosocystis oceanus 1985
Nitrosolobus multiformis 10
Nitrosolobus multiformis gen. n. sp. n. 2551
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Nitrosomonas europaea 10 5508 5532 7373 9479 9485 9924 10927
Nitrosomonas marina 9485
Nitrosomonas sp. 879
Nitrosospira briensis 10
Nitrospina gracilis 10
Nitrospina gracilis sp. n. 3389
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Nocardia calcarea 8258 9661
Nocardia canicruria 8258
Nocardia caviae 2569 2769 2912
Nocardia cellulans 8258 9661
Nocardia corallina 350 1777 2912 4435 4514 5490 9352
Nocardia dassonvillei 2912
Nocardia erythropolis 1777 2769 3415 5531 8765 9352
Nocardia farcinica 2769 2912 9352
Nocardia globerula 1777 3415 3531 5352
Nocardia graminis 89
Nocardia interforma 1150 9683
Nocardia kirovani 2769 3517 9525
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Nocardia opaca 1777 3242 4435
Nocardia pellegrino 2912 7353
Nocardia pelletieri 2912
Nocardia polychromogenes 2912
Nocardia restrictus 3415
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Nocardia rubra 1005 1777 2912 9352
Nocardia rubropertincta 1777
Nocardia salmonicolor 2912
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Nocardia spp. 1732 2205
Nocardia sumatra 2769

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Pasteurella multocida 663 1507 1756 1757 2453 2560 2995 3068 3140 3241 3275 4005 4286 4287 4796 4935 4947 5766 5825 5954 5956 6455 6618 6718 6749 7200 7201 7872 7973 8113 8149 8896 9010 9016 9195 9196 9482 9584 9938 10266 10648 10800 11111 11129 11269
Pasteurella pestis 394 738 797 853 1141 1270 1575 2395 2882 3219 3242 3730 4085 4110 4671 4672 5826 6020 6050 6056 6057 6074 6105 6560 6701 7090 7097 7148 8030 8034 8036 8750 9070 9153 9163 9842 9938 10098 10191 10241 10285 10349 10803 11160 11234 11347
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Pseudomonas aurantiaca 6745 7327 8430
Pseudomonas aureofaciens 2743 2948 4464 4525 6268
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Ruminococcus bromii sp.n. 7346
Ruminococcus flavefaciens 2819 3838 5384 9557
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Salmonella abony 186 2557 5389 6255 8249
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Salmonella agama 10116
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Salmonella ahanou 9338
Salmonella ahepe 2557
Salmonella alachua 5699
Salmonella amersfoort 6762
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Salmonella assen var.diphasique 9338
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Salmonella doorn 9338
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Salmonella dublin 864 1493 2247 2393 2686 3214 4068 4071 4195 4276 4946 4991 5981 6762 6763 6985 6995 8249 9008 9699 10188 10190 10386
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Salmonella dumfries 9338
Salmonella durham 506 10116
Salmonella dusseldorf 2429
Salmonella eboko 9338
Salmonella eilbek 4279
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Sarcina goodsir 1761
Sarcina litoralis 7393
Sarcina lutea 210 335 1336 1608 1749 2948 3068 3317 3651 3686 4204 4242 4596 4775 6584 6941 7562 7680 7690 7790 7829 8641 8698 8900 9221 9353 9359 9485 9916 10757 11245
Sarcina marina 7393
Sarcina maxima 1169 7343
Sarcina morrhuae 7393
Sarcina spp. 1409
Sarcina subflava 3317
Sarcina ureae 1749 2730 8542
Sarcina ventriculi 1169 3673 7343
Schizomycetes 1727
Selenomonas 7293
Selenomonas ruminantium 204 6548
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Shigella dispar 3317
Shigella dysenteriae 32 762 997 1626 1665 1666 3068 3171 3172 4167 4966 5326 6862 7096 7741 8140 8620 9153 9163 9238 9485 9614 9835 9910 10240 10802 10884 11054 11159 11197
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Shigella manolovii 1073
Shigella newcastle 4963 5823 9993
Shigella schmitzii 573 4242
Shigella scholtensii 1073
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Shigella sofia 1073
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Sorangium compositum 1122
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Spirillaceae 5492 10420
Spirillospora albida 8283
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Spirillum giesbergeri 5751
Spirillum itersonii 3675 7637 8620 9408
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Spirillum tenue 5751
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Spirochaeta plicatilis 9325
Spirochaeta strenostrepta 3448
Spirochaeta zuelzerae 3448
Sporocytophaga myxococcoides 9511
Sporocytophaga sp. 64
Sporolactobacillus inulinus 271
Sporosarcina urae 4349
Staphylococcus 266 486 574 586 601 637 640 788 799 800 801 825 838 1402 1450 2290 2958 3238 3374 3402 3821 3856 3864 3885 3896 3897 3899 3900 3953 3958 3959 4019 4024 4038 4067 4114 4184 4225 4227 4259 4260 4289 4291 4293 4349 4489 4582 4589 4628 4642 4690 4766 4788 4792 4838 4840 4842 4896 4905 4923 4949 4968 4969 5025 5071 5072 5073 5075 5118 5209 5210 5443 5587 5682 5692 5694 5735 5737 5738 5740 5764 5791 5792 5822 5829 5830 5834 5877 5882 5886 5895 5896 5898 5905 6031 6058 6059 6086 6090 6111 6160 6169 6218 6220 6249 6395 6419 6458 6459 6460 6461 6610 6612 6630 6768 6802 6811 6821 6822 6823 6824 6855 6871 6877 6878 6879 6880 6881 6884 6888 6893 6895 6938 6940 6951 6990 7002 7010 7036 7043 7045 7055 7080 7237 7239 7254 7288 7345 7536 7765 7818 7833 7836 7837 7840 7841 7879 7880 7881 7882 7883 7884 7885 7886 7898 8132 8141 8154 8161 8407 8475 8814 8818 8861 8890 8901 8904 8951 8959 8961 8983 8992 9075 9167 9199 9228 9244 9279 9285 9321 9322 9342 9764 9840 9889 9891 9916 9940 9985 10002 10035 10046 10062 10063 10064 10065 10099 10120 10123 10166 10246 10301 10321 10322 10324 10342 10391 10875 10914 10923 10956 11003 11004 11065 11092 11093 11112 11166 11184 11236 11304 11305 11306 11322 11332
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Staphylococcus aureus strain copenhagen 3503

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Staphylococcus enteritidis 2943 6771

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Staphylococcus faecium 10075

Staphylococcus group A 3283

Staphylococcus lactis 163 1029 4429

Staphylococcus pullorum 2943

Staphylococcus pyogenes 847 1397 1543 2536 2983 3399 3956 4201 5214 5802 6613 6935 7877 8195 10060 10299 10323 10641 10859 11165

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Staphylococcus smith 3842

Staphylococcus sp. 273 274 275 638 1213 1369 1388 1394 1395 1399 1406 1457 1496 1559 1611 1665 1666 1667 1943 2257 2259 2483 2484 2712 2821 2920 2925 2944 2991 3005 3007 3009 3010 3011 3031 3175 3176 3285 3318

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Staphylococcus twort 4091

Stibiobacter 10434

Stigmatella aurantiaca 63

Stigmatella erecta 63

Streptobacillus 11003

Streptobacillus moniliformis 3147 5133 10127 10967

Streptobacterium casei 47

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Streptococcus casei 8262

Streptococcus cremoris 3582 3618 4644 5530 5549 5550 8390 9030 9345 9579 9919 10751

Streptococcus dashe 4766

Streptococcus diacetilactis 5530 7562 8390 9030 9345 10751

Streptococcus durans 2081 3409 6094 8253 9773

Streptococcus dysgalactiae 3234 6200

Streptococcus epidermidis 3220

Streptococcus equi 6094 8100 10228 10275 11273

Streptococcus equinus 3409 5694

Streptococcus equisimilis 750 4007 6094 6999

Streptococcus faecalis 203 268 338 357 509 549 673 815 945 1024 1165 1166 1181 1217 1230 1247 1321 1333 1352 1409 1494 1983 1997 2002 2026 2027 2048 2171 2242 2295 2359 2494 2546 2627 2822 2947 2948 3011 3056 3067 3068 3140 3409 3484 3610 3616 3644 3709 3731 3784 3810 3811 4038 4213 4224 4226 4242 4294 4419 4446 4599 4604 4823 4892 5312 5313 5395 5530 5580 5694 5744 5765 5778 5820 5897 5995 6021 6094 6255 6315 6358 6394 6398 6463 6464 6465 6524 6531 6562 6583 6620 6623 6883 6894 6937 6941 7227 7281 7437 7458 7575 7576 7605 7608 7641 7642 7646 7647 7649 7711 7810 7829 7834 7877 8089 8140 8253 8364 8419 8603 8692 8796 8799 8805 8850 8954 9143 9153 9163 9263 9278 9627 9735 9757 9773 9864 9938 10009 10042 10047 10073 10074 10075 10347 10380 10557 10589 10718 10722 10738 10753 10797 10887 11051 11061 11062 11339 11344

Streptococcus faecalis var. liquefaciens 2002 2081 4009 4750 5694 6208 7315 7562 8163 8253 9773 11340

Streptococcus faecalis var. zymogenes 8253 9773 10755 11008

Streptococcus faecalis var. zymogenes mobilis 5694

Streptococcus faecium 858 1353 2002 2081 2546 3409 3495 4229 4458 4772 5694 6094 6428 6621 8253 9602 9702 9773 9915 10755

Streptococcus faecium var. durans 5694 6702 7506

Streptococcus faecium var. mobilis 2081

Streptococcus group A 417 483 595 654 749 756 1017 1685 1766 1767 2405 2417 2435 2514 3017 3111 3257 3305 3862 3863 3907 4064 4159 4643 4677 4798 4903 5026 5136 5480 5590 6093 6703 6723 6892 7106 7644 7887 8118 8168 8676 8890 9170 9219 9947 9948 10075 10172 10227 10240 10326 10354 10355 10759 10963 10964 11006 11201 11202 11203 11218 11241 11325

Streptococcus group B 1408 1580 1768 3907 7887 7888 7889 11204

Streptococcus group C 1210 3305 3907 7887 7890 8676 8909

Streptococcus group D 550 802 1769 6288 8256 8257 8368 8909 11010

Streptococcus group E 3352 4850 6147 6703 7158

Streptococcus group G 3305 3907 4798 6703 7887

Streptococcus group H 466 3504 5562 5662 5663 7400 7713 8476 9728

Streptococcus group H challis strain 2132

Streptococcus group L 3235

Streptococcus group N 5218 8184

Streptococcus haemolyticus 1336 1676 2649 2671 2943 3070 3904 4764 6622 6663 8074 9744 10056

Streptococcus haemolyticus group A 10130

Streptococcus intermedius 4852

Streptococcus lactis 256 1097 1098 1099 2078

2631 2797 3507 4583 4589 4644 5394 5530 5548 5549 5550 6779 7647 7648 8390 8620 9030 9578 9758 9859 9907 10751
Streptococcus liquefaciens 3409
Streptococcus madurae 4453
Streptococcus mastitidis 3249
Streptococcus mitis 1940 2950 3260 3847 6613 9773 10967
Streptococcus mucosus 8968
Streptococcus mutans 597 869 1482 1484 1718 1719 2166 2211 3409 3442 3662 3785 3847 4351 4382 4415 4419 4423 5139 6381 6563 6619 6624 7014 7052 7347 7528 7645 8166 8254 8296 8658 9080 9218 9565 10250 10381 10382 10393 10677 10688 10714 10770 10882 10940 10941
Streptococcus mutans ingbritt 1024
Streptococcus pneumoniae 26 1397 2171 2562 2902 2983 3020 3070 3140 3183 3305 4798 5738 6935 6936 6976 7924 8966 9200 9572 9995 10042 10060 10818
Streptococcus pyogenes 750 1327 1409 1457 1614 1896 2057 2169 2201 2205 2237 2304 2416 2436 2475 2499 2907 2940 2949 2983 3068 3070 3140 3184 3185 3612 3826 3841 3855 3967 4094 4201 4228 4476 4606 4701 4718 4719 4758 4759 4760 4761 4805 5137 5138 5770 5774 5828 5897 6029 6613 6618 6743 6749 6771 6776 6778 6799 6826 6889 6937 6941 7050 7229 7448 7643 7714 8195 8196 8359 8759 8965 8967 9200 9218 9222 9393 9623 9679 9856 9911 9995 10010 10013 10171 10392 10818 10819 10904 10947 11009 11061
Streptococcus pyogenes group A 6893
Streptococcus pyogenes humanus group A 1301 9910
Streptococcus pyogenes type A 8195
Streptococcus salivarius 217 247 869 1719 1896 2212 3260 3442 3785 3847 4423 7456 8435 9080 9218 9773 10941 10967 11096
Streptococcus sanguis 602 1719 1720 1940 3847 4423 7299 7463 9218 9773 10382 10940 10941 10967
Streptococcus scarlatinae 8025
Streptococcus sp. 554 594 599 1025 1369 1399 1406 1464 1496 1590 1896 2046 2901 2920 2921 2925 2929 2944 2962 2964 2965 2991 3005 3009 3014 3015 3016 3018 3019 3031 3054 3063 3141 3175 3258 3286 3304 3350 3351
Streptococcus spp. 428 473 543 587 596 637 762 865 1368 1386 1483 1560 1717 2056 2079 2199 2268 2368 2424 2437 2457
Streptococcus suis 7081 7082
Streptococcus thermophilus 2025 2080 2796 4538 5530 5589 7648 8613 9030 10751
Streptococcus uberis 3234 4008 5217 6200 6998 9747 9774 11130
Streptococcus viridans 602 1370 1405 1409 1452 1466 1896 2169 2171 2515 2562 2922 2963 2983 3054 3068 3070 3305 3855 3857 3898 3899 3909 4202 4228 4824 4884 5738 5802 5813 5828 5834 5898 6895 6931 6941 6950 7280 7711 8890 8910 8962 9081 9264 9757 9894 10009 10011 10044 10075 10100 10353 10967 11010
Streptococcus zooepidemicus 2332 6094 10120
Streptococcus zymogenes 1016 1328 3409 7641
Streptomyces 193 361 1737 3608 3644 3688 3739 4247 4776 5176 5229 5418 5487 5511 5523 5773 5886 6241 6325 6357 6530 7355 7618 7620 8202 8263 8432 8433 8452 8576 8624 8702 8825 8826 9296 9330 9566 9648 9653 9668 9682 10404 10458 10595 10692 10698 10721 10783
Streptomyces achromogenes 7805
Streptomyces acrimycini 4680
Streptomyces albogriseolus 6480
Streptomyces alboniger 6646
Streptomyces albulus 8571
Streptomyces albus 3549 5404 6319 6418 6653 8463
Streptomyces alni 9928
Streptomyces ambofaciens 3531 9683
Streptomyces antibioticus 2948 3602 5525 9680 10700
Streptomyces arenae 8574
Streptomyces armentosus 9683
Streptomyces aureofaciens 236 237 1886 7806 8436 8504 9508 9509 9683 10700
Streptomyces aureus 1159 6543 9475
Streptomyces bikiniensis 9353 9683
Streptomyces bikiniensis var.zorbonensis 1160
Streptomyces caespitosus 6319 9683
Streptomyces californicus 9353
Streptomyces canus 4564 10533 10931
Streptomyces carzinostaticus 6380
Streptomyces chrestomiceticus 10900
Streptomyces chrysomallus 8286 9680
Streptomyces cinereocrocatus 9683
Streptomyces cinnamomeus 5527
Streptomyces citricolor 3812
Streptomyces clavuligerus 2571
Streptomyces coelicolor . 353 947 2009 2138 2139 2140 2869 3787 4712 5171 8766 9683 9827 9828 10720 10865
Streptomyces coerulescens 6319
Streptomyces collinus 5526 9681
Streptomyces cremeus 5355
Streptomyces diastaticus 6653
Streptomyces eridani 1154 7615
Streptomyces erythreus 4681 6320 8564 8577 10700

Streptomyces finlayi 10485
Streptomyces flaveolus 6321 6653
Streptomyces flavofungini 8568
Streptomyces fradiae 365 1100 2718 3658 9683 10700
Streptomyces garyphalus 516
Streptomyces glaucescens 4680 10485
Streptomyces glaucus 10459
Streptomyces gougerotii 8569
Streptomyces griseochromogenes 10489
Streptomyces griseospiralis 9683
Streptomyces griseoverticillatus 3664
Streptomyces griseus 291 1050 1092 1093 1100 3683 5177 6526 7603 8286 8481 8571 8580 8581 8620 9353 9549 9598 9683 10485 10685 10692 10700 11125
Streptomyces humidus 9353
Streptomyces hydrogenans 10631
Streptomyces hygroscopicus 2011 6539 8582 9683
Streptomyces hygroscopicus var.enhygrus 1155 6542
Streptomyces hygroscopicus var.limoneus 8578
Streptomyces kanamyceticus 11126
Streptomyces kasugaensis 3666 3671 9683
Streptomyces lincolnensis 9683 10729
Streptomyces listeri 945
Streptomyces lividus sp.n. 922 1153
Streptomyces luteoreticuli 9670
Streptomyces lydicus 1148 5514
Streptomyces mauvecolor 10550 10735
Streptomyces mediocidicus 6319
Streptomyces mediterranei 9683
Streptomyces metachromogenes 1152 1237
Streptomyces michiganensis 10735
Streptomyces mitakaensis 4564
Streptomyces mycarofaciens 2012
Streptomyces naniwaensis 3416 3689
Streptomyces naraensis 8507 8571
Streptomyces niveus 6540
Streptomyces noursei 1158 8571
Streptomyces noursei var.polifungini 4562 8570
Streptomyces olivaceus 9353 10700
Streptomyces pactum 10459
Streptomyces pelletieri 3037
Streptomyces phaeochromogenes 9678 9874
Streptomyces pilosus 6321
Streptomyces platensis 9353
Streptomyces plicatus 7612
Streptomyces prasinopilosus 6321 10459
Streptomyces prasinus 10459
Streptomyces punipalus 9683
Streptomyces purpurascens 5171
Streptomyces rameus 9353
Streptomyces rimosus 9683 9828 9829 9830 10692
Streptomyces rochei var.volubilis 923 1156 1157 9683
Streptomyces roseoflavus var.roseofungini 3446 7381
Streptomyces satsumaensis 1062
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Streptomyces showdoensis 355
Streptomyces sioyaensis 7616
Streptomyces somaliensis 8981
Streptomyces sp. 230 852 1930 1992 1994 2063 2570 2944 3378
Streptomyces spectabilis 6943
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Streptomyces tateyamensis 6786
Streptomyces tendae 6319
Streptomyces thermodiastaticus 10594
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Streptomyces thermotolerans 6319
Streptomyces tolypophorus 6544 6647 7356
Streptomyces toyocanesis 9683
Streptomyces tubercidicus 9683
Streptomyces umbrinus 9679
Streptomyces venezuelae 6653 7496 9353 10485
Streptomyces verticillus 9868
Streptomyces violaceorectus 10578
Streptomyces violaceus 6319 9475
Streptomyces violascens 5228 5529
Streptomyces viridans 11240
Streptomyces viridochromogenes 4342 4556 6319 10485
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Succinivibrio dextrinosolvens 3838
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Thermomonospora curvata 5230
Thermomonospora fusca 10594
Thermomonospora viridis 6322
Thermopolyspora glauca 4446
Thermopolyspora polyspora 8873 9136
Thermus aquaticus 205 7514 7775 10422
Thiobacillus 3697 8203 10663
Thiobacillus denitrificans 372 879 1186 4446 5532 7560 10664
Thiobacillus ferrooxidans 258 374 375 1111 1995 1996 2930 3684 4534 4572 6575 6576 9294 9638 9729 10414 10433
Thiobacillus intermedius 10414
Thiobacillus neapolitanus 1187 5532 8538

Thiobacillus novellus 1075 1124 8484 9685
Thiobacillus sp. 373 1188
Thiobacillus thiooxidans 206 1177 1187 1885 4431 5459 6416 10403 10414
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Thiocapsa pfennigii 231
Thiocapsa roseopersicina 1893
Thiocapsa sp. 892
Thiocapsa spp. 3
Thiocystis 5563
Thiocystis gelatinosa (winogradsky) comb.n. 1
Thiocystis spp. 3
Thiocystis violacea 9631
Thiodictyon bacillosum (winogradsky) comb.n. 1
Thiodictyon spp. 3
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Treponema 7357 11251
Treponema denticola 404 3831 3832
Treponema endemicum 11119
Treponema kazan 5017
Treponema microdentium 3418
Treponema pallidum 566 567 616 617 618 651 753 948 1207 1369 1378 1430 1431 1479 1546 1550 1551 1581 1589 1591 1638 2236 2243 2278 2319 2324 2386 2599 2600 2901 2969 2970 3039 3040 3073 3091 3092 3105 3116 3180 3202 3203 3417 3418 3441 3873 3874 3875 3932 3973 3974 4061 4062 4063 4078 4100 4119 4120 4121 4122 4123 4150 4206 4207 4788 4810 4811 4812 4925 4979 5096 5608 5803 5804 5805 5835 5859 5860 5861 5862 5863 5866 5918 6039 6108 6112 6655 6656 6657 6658 6659 6835 6836 6837 6838 6839 6840 6841 6893 6911 6929 6942 6981 7046 7047 7063 7066 7067 7133 7175 7231 7383 7384 7694 7699 7700 7857 7902 7903 7930 7952 7981 8024 8043 8084 8085 8102 8628 8629 8689 8691 8875 8928 8929 8982 8983 9147 9163 9175 9222 9959 9960 9961 9962 9963 9976 10072 10086 10087 10098 10164 10169 10176 10177 10180 10181 10183 10231 10232 10762 10983 10984 11034 11059
Treponema pertenue 11119
Treponema phagedenis 3831 3832
Treponema refringens 3418 3831 3832
Treponema reiteri 5017 10497
Treponema sp. 1979
Treponema vincentii 3831 3832
Treponema zuelzerae 3418
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Tyrothrix scaber 7386

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Veillonella alcalescens 1702 5380 6475 8130 9596 10382 11303
Veillonella parula 2002
Veillonella parvula 4715 6183 8890
Veillonella prevot 44
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Veillonella spp. 1940 2424
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Vibrio 880 2556 3392 3527 3882 4221 4252 4968 5385 5423 5445 5584 5969 6048 6049 6250 6506 6586 6588 6993 7307 7765 9308 9311 9648 10342 11128
Vibrio adaptus 534
Vibrio alcaligenes 2479
Vibrio alginolyticus 1206 3452 4269 9005 9117
Vibrio anguillarum 16 1206 2331 3213 3452 4268 4933 9005 10114
Vibrio cholerae 502 627 654 774 898 1088 1208 1212 1214 1327 1348 1349 1380 1624 1649 1660 1678 2073 2159 2238 2673 2703 2810 2871 2901 2954 2977 3163 3164 3165 3166 3247 3248 3325 3594 3722 3793 3881 3950 3983 4035 4130 4164 4165 4173 4174 4175 4176 4480 4658 4780 4821 4945 4958 4961 5062 5105 5199 5446 5447 5568 5879 5880 6011 6073 6081 6101 6124 6168 6174 6175 6177 6193 6455 6496 6715 6746 6791 6851 6926 6927 6975 7009 7032 7033 7034 7035 7090 7136 7183 7184 7243 7265 7317 7323 7709 7864 7865 8012 8062 8111 8146 8147 8243 8511 8620 8847 8947 8948 8949 9055 9056 9057 9059 9060 9061 9062 9063 9118 9145 9185 9186 9202 9218 9236 9237 9251 9383 9689 9931 9979 9980 10040 10041 10150 10151 10152 10208 10209 10262 10285 10295 10296 10309 10310 10325 10333 10349 10440 10647 11152 11245 11256 11297 11298 11315 11335
Vibrio cholerae El Tor 502 707 899 1088 1348 1349 1448 1537 1625 4959 6716 6746 7184 8242 8847 9250 9383 9689 10152 10262 10440
Vibrio cholerae Inaba 1568
Vibrio cholerae Ogawa 1568
Vibrio coli 1490 3365 3722 3997 6988 10334
Vibrio comma 292 1626 3140 8470 8989
Vibrio cuneatus 7329
Vibrio eltor 3722
Vibrio fetus 1381 2978 2979 2980 3722 3996 4819 4820 5019 6850 7329 8052 8087 9116 9153 10285
Vibrio fetus var.intestinalis 571 664 2448 3997 7969
Vibrio fetus var.venerealis 2448 7185 7969
Vibrio ichthyodermis 16
Vibrio marinus 9331
Vibrio metschnicovii 10761

Vibrio parahaemolyticus 323 572 708 733 1223 1542 1569 1744 1956 2479 3452 3570 3916 4220 4581 4637 4645 4752 4785 4960 5567 5569 6021 6213 6264 6550 7035 7864 9005 9058 9238 9766 10993 10994 11193 11194
Vibrio percolans 5726 7329
Vibrio piscium 16
Vibrio pseudomonas 5158
Vibrio psychroerythrus sp.n. 9331
Vibrio shigelloides 21
Vibrio sp. 1008 2037 2911
Vibrio spp. 886
Vibrio succinogenes 3701
Vibrio-aeromonas 4267

Welchia perfringens 858
Wolbachia 4234
Wolbachia pipientis 77

Xanthomonas 4003 4446 6272 6274 6618 7827 8006 8201 8261 9308 9330 10044 10404
Xanthomonas ampelina 2352
Xanthomonas campestris 2785 5996 7831 8391 8620 11139 11149
Xanthomonas citri 1524 6686 8523
Xanthomonas cyamopsidis 1061 1089 1567 6790
Xanthomonas dieffenbachiae 8794
Xanthomonas fragariae 1745
Xanthomonas heliotropii sp.n. 5995
Xanthomonas heteroceae 10140
Xanthomonas holcicola 5993
Xanthomonas malvacearum 6272 7997 8464 8585 8586
Xanthomonas nigromaculans f.sp.zinniae 9038
Xanthomonas oryzae 407 438 1522 3812 5717 7022 7023 7440 7998 9683
Xanthomonas phaseoli 695 696 6272 7024 7827 7999 9033 9333
Xanthomonas phaseoli var.fuscans 695 7831 9033
Xanthomonas pruni 3151 5994
Xanthomonas rubrisorghi 5997
Xanthomonas sesami 1523
Xanthomonas sinensis 9532
Xanthomonas spp. 886 1743
Xanthomonas translucens 1522
Xanthomonas translucens f.sp.oryzae 7022 7998 9039 10141
Xanthomonas translucens f.sp.oryzicola 897
Xanthomonas vesicatoria 697 7024 11141
Xanthomonas vignicola 5995

Yersinia 6586 9798 10776
Yersinia enterocolitica 903 1227 2249 3216 3851 3890 3891 4795 4834 5011 5023 5731 5788 5789 5790 6073 6076 6865 7098 8250 8851 8853 8894 8895 9071 9072 9101 9994 10684 11186
Yersinia pestis 3174 3217 3218 4155 6019 6329 7118 8351 8690 9102 9282 9295 10684 11216
Yersinia pseudotuberculosis 911 1758 2996 5788 5789 5955 8851 8852 8895 9072 10684 11186

Zoogloea ramigera 15 6556 7610
Zymobacterium oroticum 10605
Zymomonas anaerobia 1876 2351

# Abbreviations

| | |
|---|---|
| | adenine |
| | angstrom |
| Ch | acetylcholine |
| CTH | adrenocorticotropic hormone |
| DP | adenosine diphosphate |
| MP | adenosine monophosphate |
| nopl. | Anoplura |
| P | arginine phosphate |
| pprox | approximately |
| rach. | Arachnida |
| ran. | Araneae |
| t wt | atomic weight |
| TP | adenosine triphosphate |
| TPase | adenosine triphosphatase |
| ug | August |
| OD | biochemical oxygen demand |
| i.d. | bis in die (twice daily) |
| HC | benzene hexachloride |
| latt. | Blattodea |
| | curie |
| | cytosine |
| a | circa |
| A | corpora allata, corpus allatum |
| C | corpora cardiaca |
| D | circular dichroism |
| $D_{50}$ | median curative dose |
| DP | cytidine diphosphate |
| F | complement fixation |
| FU | colony forming unit |
| hil. | Chilopoda |
| M-cellulose | carboxymethyl cellulose |
| MP | cytidine monophosphate |
| NS | central nervous system |
| oA | co-enzyme A |
| oASH | reduced co-enzyme A |
| OD | chemical oxygen demand |
| oeff | coefficient |
| ol. | Coleoptera |
| ollem. | Collembola |
| omb.n. | new combination |
| ompd | compound |
| onc | concentration |
| oQ | co-enzyme Q (ubiquinone) |
| PE | cytopathic effect |
| /s | cycles per second |
| SF | cerebrospinal fluid |
| T | calcitonin |
| TP | cytidine triphosphate |
| v | cultivar |
| yt | cytochrome |
| | decimal reduction time |
| DA | dichloro-diphenyl-acetic acid |
| DD | dichloro-diphenyl-dichloroethylene |
| DT | dichloro-diphenyl-trichloroethane |
| DEAE-cellulose | diethylaminoethyl cellulose |
| Dec | December |
| Derm. | Dermaptera |
| diam | diameter |
| Dipl. | Diplura |
| Diplop. | Diplopoda |
| Dipt. | Diptera |
| DNA | deoxyribonucleic acid |
| DNase | deoxyribonuclease |
| DNP | deoxyribonucleoprotein |
| dopa | dihydroxyphenylalanine |
| ECTEOLA-cellulose | epichlorohydrin-triethanolamine and cellulose |
| $ED_{50}$ | median effective dose |
| EDTA | ethylenediamine-tetraacetic acid |
| Emb. | Embioptera |
| EMP | Embden-Meyerhof-Parnas |
| EMS | ethyl methane sulphonate |
| ENT | ear, nose and throat |
| Ephem. | Ephemeroptera |
| ER | endoplasmic reticulum |
| ESR | electron spin resonance |
| | forma |
| FA | fatty acid(s) |
| FAD | flavine adenine dinucleotide |
| am.n. | new family |
| Feb | February |
| FP($H_2$) | (reduced) flavoprotein |
| .sp. | forma specialis |
| t | foot, feet |
| t c | foot-candle(s) |
| tm | fathom(s) |
| | gram(s) |
| | guanine |
| ABA | gamma-aminobutyric acid |
| all | gallon(s) |

| | |
|---|---|
| GDP | guanosine diphosphate |
| gen | genus |
| gen.n. | new genus |
| GLC | gas liquid chromatography |
| GMP | guanosine monophosphate |
| G6PD | glucose-6-phosphate dehydrogenase |
| GTP | guanosine triphosphate |
| HA | haemagglutination |
| Hb | haemoglobin |
| Hem. | Hemiptera |
| Het. | Heteroptera |
| HI | haemagglutination inhibition |
| Hom. | Homoptera |
| hr | hour(s) |
| HS | horizontal section |
| HT | hydroxytryptamine |
| Hym. | Hymenoptera |
| Hz | hertz |
| i.a. | intraarterial, -ly |
| IAA | indole acetic acid |
| i.c. | intracerebral, -ly |
| i.d. | intradermal, -ly |
| $ID_{50}$ | median infective dose |
| IDP | inosine diphosphate |
| IgG, M, etc | immunoglobulin G, M, etc |
| i.m. | intramuscular, -ly |
| IMP | inosine monophosphate |
| in | inch, inches |
| i.n. | intranasal, -ly |
| INH | isoniazid |
| i.p. | intraperitoneal, -ly |
| IR | infrared |
| Isopt. | Isoptera |
| ITP | inosine triphosphate |
| i.v. | intravenous, -ly |
| Jan | January |
| JH | juvenile hormone |
| k | kilo |
| kc/s | kilocycles per second |
| Km | Michaelis constant |
| lb | pound(s) |
| L/D | light/dark regime |
| $LD_{50}$ | median lethal dose |
| LDH | lactate dehydrogenase |
| Lep. | Lepidoptera |
| log | logarithm |
| LS | longitudinal section |
| m | milli or meter(s) |
| M | molar |
| μ | micro, micron(s) |
| Mall. | Mallophaga |
| Mant. | Mantodea |
| MBC | minimum bactericidal concentration |
| Mec. | Mecoptera |
| Megal. | Megaloptera |
| mg | milligram(s) |
| MIC | minimum inhibitory concentration |
| min | minute(s) |
| mol wt | molecular weight |
| mp | melting point |
| MPN | most probable number |
| mRNA | messenger RNA |
| Myriap. | Myriapoda |
| n | nano |
| NAD($H_2$) | (reduced) nicotinamide adenine dinucleotide |
| NADP($H_2$) | (reduced) nicotinamide adenine dinucleotide phosphate |
| Neur. | Neuroptera |
| NMR | nuclear magnetic resonance |
| nom.n. | new name |
| Nov | November |
| NTP | normal temperature & pressure |
| Oct | October |
| OD | optical density |
| Odon. | Odonata |
| Onych. | Onychophora |
| OP. | osmotic pressure |
| Opil. | Opiliones |
| ORD | optical rotary dispersion |
| Orth. | Orthoptera |
| oz | ounce(s) |
| PAS | para-aminosalicylic acid |
| PBS | phosphate buffered saline |
| PDA | potato dextrose agar |
| PFU | plaque forming unit |
| 6PGD | 6-phosphogluconate dehydrogenase |
| PGM | phosphoglucomutase |
| PHA | phytohaemagglutinin |
| Phasm. | Phasmatodea |
| PkFU | pock forming unit |
| Plec. | Plecoptera |

| | |
|---|---|
| PMR | proton magnetic resonance |
| p.o. | per os |
| PP | pyrophosphate |
| PPLO | pleuropneumonia-like organism |
| ppm | parts per million |
| Prot. | Protura |
| Pseudoscorp. | Pseudoscorpiones |
| p.s.i. | pounds per square inch |
| Psoc. | Psocoptera |
| PTC | phenylthiocarbamide |
| PTE | parathyroid extract |
| PTH | parathyroid hormone |
| q.i.d. | quarter in die (4 times a day) |
| quat | quaternary |
| rad | radiation unit (100 ergs/g) |
| RBC | red blood cell |
| Rf | relative flow rate |
| RH | relative humidity |
| RNA | ribonucleic acid |
| RNase | ribonuclease |
| RNP | ribonucleoprotein |
| rpm | revolutions per minute |
| RQ | respiratory quotient |
| rRNA | ribosomal RNA |
| S | Svedberg unit |
| s.c. | subcutaneous, -ly |
| Scorp. | Scorpiones |
| SDS | sodium dodecyl sulphate |
| sec | second(s) |
| Sept | September |
| SG | Specific gravity |
| Siphon. | Siphonaptera |
| sp(p). | species |
| sp.n. | new species |
| s.str. | sensu stricto |
| str | strain |
| Streps. | Strepsiptera |
| subfam.n. | new subfamily |
| subgen | subgenus |
| subgen.n. | new subgenus |
| subsp(p) | subspecies |
| subsp.n. | new subspecies |
| SV40 | simian virus 40 |
| syn.n. | new synonym |
| T | thymine |
| TCA | trichloroacetic acid |
| $TCD_{50}$ | median tissue culture infective dose |
| TCT | thyrocalcitonin |
| TEM | triethylene melamine |
| temp | temperature |
| tert | tertiary |
| Thysanopt. | Thysanoptera |
| t.i.d. | ter in die (three times a day) |
| TLC | thin-layer chromatography |
| TMV | tobacco mosaic virus |
| trib.n. | new tribe |
| Trich. | Trichoptera |
| Tris | 2-amino-2-hydroxymethylpropane-1,3-diol |
| tRNA | transfer RNA |
| TS | transverse section |
| U | uracil |
| UDP | uridine diphosphate |
| UDPG | uridine diphosphate glucose |
| UDPNAG | uridine diphosphate N-acetylglucosamine |
| UMP | uridine monophosphate |
| UTP | uridine triphosphate |
| UV | ultraviolet |
| var | variety |
| var.n. | new variety |
| vol | volume |
| VS | vertical section |
| v/v | volume per volume |
| WBC | white blood cell |
| wk | week, weeks |
| wt | weight |
| w/v | weight per volume |
| w/w | weight per weight |
| Xiph. | Xiphosura |
| yd | yard(s) |
| yr | year(s) |
| Zor. | Zoraptera |
| % | per cent |
| ‰ | per thousand |

Amino acids are only abbreviated in the description of their sequence in a peptide or protein; the I.U.P.A.C. abbreviations are used. Positive inorganic ions are written as $Mn^{2+}$, $Na^{+}$, negative ions as $Cl^{-}$ $SO_4^{2-}$ Elements are denoted by symbols

## Language abbreviations

| text | summaries | |
|---|---|---|
| Af | af | Afrikaans |
| Ar | ar | Arabic |
| Be | be | Belorussian |
| Bg | bg | Bulgarian |
| Ch | ch | Chinese |
| Cs | cs | Czech |
| Da | da | Danish |
| Nl | nl | Dutch |
| En | en | English |
| Ee | ee | Estonian |
| Fi | fi | Finnish |
| Fl | fl | Flemish |
| Fr | fr | French |
| De | de | German |
| Gr | gr | Greek |
| He | he | Hebrew |
| Hu | hu | Hungarian |
| It | it | Italian |
| Ja | ja | Japanese |
| Ko | ko | Korean |
| Lv | lv | Latvian |
| Li | li | Lithuanian |
| Ma | ma | Macedonian |
| No | no | Norwegian |
| Pl | pl | Polish |
| Pt | pt | Portuguese |
| Ro | ro | Romanian |
| Ru | ru | Russian |
| Sh | sh | Serbo-croat |
| Sk | sk | Slovak |
| Sn | sn | Slovenian |
| Es | es | Spanish |
| Sv | sv | Swedish |
| Tr | tr | Turkish |
| Uk | uk | Ukrainian |

Printed by the
Cotswold Press Ltd.
Oxford, England

# Microbiology Abstracts

## Section B
## Bacteriology